

REMARKS

By this amendment, claim 1 has been amended to incorporate essential features of claim 8, which has been canceled. Claim 1 has been further amended to recite that control of a process parameter is based on a density of radicals, and that the density of radicals measurement takes into account a temperature error in the density of radicals. Support for this change to claim 1 can be found, *inter alia*, at page 22, lines 9-25 of the specification. In view of the cancellation of claim 8, claims 9 and 11 have been amended to depend from claim 1. New claims 18 and 19 have been added. Support for new claim 18 can be found in original claim 3, which was canceled previously. Support for new claim 19 can be found, *inter alia*, in original claims 1 and 8 and at page 22, lines 20-25 of the specification. Claims 1, 2-7 and 9-19 are presented for further examination.

The rejection of claims 1, 2, 7, 16 and 17 under 35 U.S.C. § 102(b) or, in the alternative, under 35 U.S.C. § 103(a) over O'Neill, US 5,770,097 in view of Blazey, US 6,527,730 or Kaneko, US 5,749,830; the rejection of claims 1, 2, 7, 16 and 17 under 35 U.S.C. § 103(a) over the Akihiro article in view of Blazey or Kaneko; the rejection of claims 4 and 5 under 35 U.S.C. § 103(a) over O'Neill in view of Blazey or Kaneko, and further in view of Pinsukanjana, US 5,936,716; the rejection of claims 6 and 7 under 35 U.S.C. § 103(a) over O'Neill in view of Blazey or Kaneko, and further in view of Yoshida, JP 06293960; the rejection of claim 13 under 35 U.S.C. § 103(a) over O'Neill in view of Blazey or Kaneko, and further in view of Deguchi and Pinsukanjana; and the rejection of claims 14 and

15 under 35 U.S.C. § 103(a) over O'Neill in view of Blazey or Kaneko, and further in view of Deguchi and Yoshida are respectfully traversed with respect to the amended claims.

Applicants note that claims 2, 4-7 and 9-18 all depend either directly or indirectly from claim 1. As noted above, claim 1 has been amended to incorporate the temperature measuring means of original claim 8. Inasmuch as none of the foregoing grounds of rejection include a rejection of claim 8, these grounds of rejections are believed to have all been rendered moot by the present amendment to claim 1. Reconsideration and withdrawal of these rejections are respectfully requested.

The rejection of claims 4 and 8-12 under 35 U.S.C. § 103(a) over O'Neill in view of Blazey or Kaneko, in view of Deguchi, JP 09210909 is respectfully traversed with respect to the amended claims.

The present invention relates to a processing apparatus comprising (i) a vessel, (ii) ultraviolet light generating means, (iii) ultraviolet light receiving means, (iv) temperature measuring means, and (v) analysis control means. The analysis control means of the claimed apparatus obtains a density of radicals from at least an output signal from the ultraviolet light receiving means in order to control a process parameter. Specifically, a process parameter is controlled using a density of radicals measurement in consideration of the temperature error in the radical density. See page 19, lines 2-19 of the specification. None of the cited references disclose or suggest a processing apparatus having an

analysis control means that controls a process parameter by taking into account a temperature error in the measured radical density.

As acknowledged in the Office Action, O'Neill does not disclose measurement of a plasma temperature, much less than a temperature error in the measured radical density is considered in order to control a process parameter. In this regard, the Office Action relies only upon Deguchi for allegedly teaching means for measuring a molecular temperature of plasma. However, as set forth below, Deguchi fails to remedy the deficiencies of O'Neill with respect to the amended claims.

Deguchi teaches a technique for determining a concentration or temperature of molecules in a plasma from an intensity distribution of a laser beam. The intensity distribution is used to obtain a corrected temperature, which is the desired result of Deguchi.

In contrast, the analysis control means of the present invention obtains a density of radicals. The temperature measurement according to the present invention is used to correct the radical density measurement, which is used to control a process parameter of the apparatus. There is no disclosure by Deguchi to use a radical density measurement for parameter control of the process, much less that a temperature error in the density of the radicals can be used to correct the density of the radicals measurement.

The cited references fail to teach or suggest that there is relationship between the radical density and temperature, much less that a radical density

measurement can be corrected using a temperature measurement. Thus, even if Deguchi discloses that an accurate temperature measurement can be provided by using a pulsed laser, one skilled in the art would not have had a reasonable expectation that such a temperature measurement could be used to successfully correct a radical density measurement. Moreover, none of the cited references teach or suggest that the (corrected) radical density is used to control a process parameter of the apparatus. Reconsideration and withdrawal of the rejection are respectfully requested.

In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

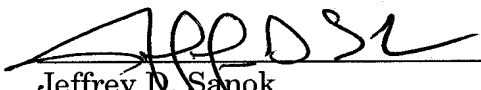
If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

Serial No. 10/509,656
Reply to Office Action June 14, 2007
September 13, 2007
Attorney Docket No. 101250.55460US

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #101250.55460US).

Respectfully submitted,

September 13, 2007


Jeffrey D. Sanok
Registration No. 32,169

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
JDS/MWR:kms
dn#4139974